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(54) Title: TEST SYSTEM FOR DETECTING CONTAMINANTS

(57) Abstract: An assay is provided for assaying a sample of soil, sand, sediment or other particulate material for the presence of contaminants such as polycyclic aromatic hydrocarbons (PAHs), organic pesticides, petroleum hydrocarbons, or polychlorinated biphenyls (PCBs), and preferably comprises: extracting an assayable amount of the contaminant from the particulate material into a water-miscible solvent, such as an organic alcohol, capable of dissolving the contaminant, the solvent optionally containing a surfactant; mixing the resultant solvent solution of the contaminant with water and optionally a surfactant, for example to a dilution factor between about 10 and about 25, whereby a mixture is obtained containing water, solvent, surfactant and any extracted contaminant; and exposing the bioluminescent organism *Vibrio fischeri* to the mixture under conditions in which the inhibition, by the contaminant, of light emitted by the organism can be related to the presence of the contaminant in the mixture. The method is sufficiently quantitative that it can be determined whether the contaminant is present in the particulate material at a concentration above or below a certain - e.g. a legally specified - level. A test kit is provided, whereby the method can be performed in the field and the result showing whether the contaminant is present at a legally acceptable or unacceptable level can be displayed.

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SCHIEWE M H ET AL: "USE OF A BACTERIAL BIOLUMINESCENCE ASSAY TO ASSESS TOXICITY OF CONTAMINATED MARINE SEDIMENTS" CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES, UNIVERSITY OF GUELPH, GUELPH, CA, vol. 42, 1985, pages 1244-1248, XP000863138 ISSN: 0706-652X page 1245, paragraph "Solvent vehicles and bioluminescent assays" table 1 ----- -/--	1-46

[X] Further documents are listed in the continuation of box C.

[ ] Patent family members are listed in annex.

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17 September 2004	11/10/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BULICH A A ET AL: "Use of the luminescent bacterial system for the rapid assessment of aquatic toxicity" ISA TRANS. 1981 UNITED STATES, vol. 20, no. 1, 1981, pages 29-34, XP009036699 abstract page 30, column 2, paragraph 1 -----	1-46
A	GUZZELLA LICIA: "Comparison of test procedures for sediment toxicity evaluation with Vibrio fischeri bacteria" CHEMOSPHERE, vol. 37, no. 14-15, December 1998 (1998-12), pages 2895-2909, XP002295880 ISSN: 0045-6535 cited in the application page 2900, paragraph 1.C -----	1-46
A	HO KAY T Y ET AL: "Physical and chemical parameters of sediment extraction and fractionation that influence toxicity, as evaluated by Microtox" ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY, vol. 12, no. 4, 1993, pages 615-625, XP009036287 ISSN: 0730-7268 cited in the application figures 2,3 -----	1-46